

PCT/SE00/00351

PATENT CLAIMS

- 5 1. Self-tapping implant (11, 12) for bone, preferably jawbone, and comprising a body (15) with threads (11, 16-17) arranged thereon, a conically tapering portion (12) arranged at its front end, and one or more spaces or bone-chip recesses (4, 5, 10 6) which accommodate bone material cut off during tapping and which are formed by removal of material from the threads and body in question, each materially reduced thread (e.g. 11) having a cutting edge (1a, 2a, 3a) which extends inwards 15 from the outer edge of the respective remaining thread part and which cooperates with the bone during tapping, characterized in that each cutting edge of a number, preferably all, of the cutting edges of the materially reduced threads have a 20 pointed shape (1b, 2b, 3b) which, in the cross section of the thread in question, essentially follows a line which deviates from a radius (r) through the remaining thread part's front portion or the pointed shape's point, that the cutting edge 25 (1a, 2a, 3a) on a first remaining thread part (1, 2, 3) merges via a radius (r') or curved part into a rear edge (e.g. 2d) on a second remaining thread part, which is arranged before the first thread part in the direction of screwing (7), for the 30 purpose of providing an effective threading characteristic related to the strength of the implant, that a cutting angle or chip angle (α), formed by the pointed shape (1b, 2b, 3b) is chosen within a range of 15-40° that each thread relief or

relief edge (2e, 3e) effected by the materially reduced thread part is arranged essentially in the conically tapering portion and behind, as viewed in the direction of screwing, each full radius part

5 (2c, 3c) which can be engaged with the bone, for the purpose of facilitating the relief function of threading and that it has double or multiple threads along all or part of its length.

10 2 Implant according to claim 1, characterized in that the cutting angle or chip angle (α) is about 20°

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15 3. Implant according to claim 1 or 2, characterized in that the conically tapering portion (12) is arranged with materially reduced thread parts with full radius and which are at least two in number.

20 4. Implant according to any of the preceding claims 1, 2 or 3, characterized in that the point angle of the cone-shaped portion (12) is less than 20°

25 5. Implant according to any of the preceding claims, characterized in that each relief edge (2, 3e) consists of two essentially plane relief surfaces (2e', 2e'') which form an obtuse angle with each other.

30 6. Implant according to any of the preceding claims, characterized in that a first portion is provided with a double or multiple thread, and a second portion is provided with a single thread or

thread numbering different from the thread numbering of the first portion, or vice versa.

7. Implant (11, 12) for bone, preferably jawbone, and comprising a body (15) with threads (11, 16-17) arranged thereon, a conically tapering portion (12) arranged at its front end, and one or more spaces or bone-chip recesses (4, 5, 6) which accommodate bone material cut off during tapping and which are formed by removal of material from the threads and body in question, each materially reduced thread (e.g. 11) having a cutting edge (1a, 2a, 3a) which extends inwards from the outer edge of the respective remaining thread part and which cooperates with the bone during tapping and in that each cutting edge of a number, preferably all, of the cutting edges of the materially reduced threads have a pointed shape (1b, 2b, 3b) which, in the cross section of the thread in question, essentially follows a line which deviates from a radius (r) through the remaining thread part's front portion or the pointed shape's point, characterized in that the cutting edges (1a, 2a, 3a) in question comprises a straight part extending from the pointed shape of the cutting edge which straight part on a first remaining thread part (1, 2, 3) merges via a radius (r') or curved part into a straight rear edge (e.g. 2d) on a second remaining thread part, which is arranged before the first thread part in the direction of screwing (7), and that the radius (r') or the curved part (10) is arranged to provide optimum remaining material in the body and remaining thread parts and,

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consequently, optimum strength of the implant part
in question.

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